

## **BUSA Input on Industry research efforts in mitigation**

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66% of South Africa's 440 million tons per annum of carbon dioxide emissions are attributable to providing energy for industry, mobility and domestic use, which is done by Eskom and Sasol, and another 22% by various forms of mining. The proportion of water used is also large, but not on the same scale as the CO<sub>2</sub> emissions.

These industries have been the foundations of the South African economy for many years, providing jobs, wealth creation, infrastructure and urban development. Great innovation has been applied in getting industry where it is today, and we'll have to apply just as much again in changing the course of future development.

Having recognised this, we in industry have conducted research in two directions, namely:

- 1 how to retain the value of what has already been developed and can be improved to remain sustainable under a new set of constraints, and
- 2 inventing in new directions (i.e. less CO<sub>2</sub> and water intensive) so as to continue the wealth creation required to satisfy the growing expectations of an evolving population.

With regard to the former, progress has been achieved in raw material substitution, energy efficiency improvements, and waste optimisation and reduction. Examples include replacement of coal with gas from Mozambique for two Sasol plants, promotion of energy efficient lighting by Eskom, revised phasing of operations in mines to reduce peak demands, and flare gas recovery for energy generation. New savings can be expected from even more demand side management, and promotion of solar water heating.

The above efforts appear to relate to power efficiency and its impact on GHG emissions, but they also reduce water consumption for the generation of power. Water conservation is a key requirement to enable growth, and individual companies as well as industrial sectors are researching further measures. The active participation of various levels of government is imperative because of the way water is sourced and distributed.

With respect to new capacity, novel technologies can be used, like carbon capture and storage which works well for highly concentrated off-gas streams. Industry and SANERI are co-operating in the development of an atlas of Southern African sites suitable for CCS. Other research projects include underground coal gasification, which avoids energy use in moving coal, thermal solar electricity generation, and nuclear energy for both electricity and heat in a limited number of applications.

With regard to water conservation measures, air or dry cooling is a replacement for water cooling, and the use of recycled effluent has been proven to be feasible for new green field developments.

However these are mitigation steps on the assumption that life “continues as usual”, which is clearly not going to be the case as we move over the peak and make serious inroads into the emissions decline period, to get to where we need to be in 2050. The major energy industries cannot on their own influence societal behaviour in a market driven economy. With the help and co-operation of the National Business Initiative, the major emitters have hosted a series of gatherings to sensitise a broader front of society about the challenges of essential lifestyle changes

These began after Sir Nicholas Stern’s visit in 2007, and have included the Minister of DEAT at one such meeting to confirm direction, as well as clarify expectations from both government and industry.

What is being achieved in these meetings a deeper knowledge of the complexity of finding balanced solutions, which reduce emissions and provide opportunities for growth and development. What has emerged is a collective determination to find those solutions and recognition that there have to be clear rules set, which promote burden sharing and result in certain emission reductions, as opposed to taxes which contribute to revenue but not necessarily a better atmosphere. An essential requirement of any reliable GHG mitigation scheme is a trusted assessment of the present emissions, and therefore our support of the Carbon Disclosure Project, and other similar efforts.

To seek the desired methodology, we have sponsored studies of economic instruments used elsewhere in the world, which have been shared with industry in general. These will enable the business collective to formulate proposals about what will work best here, and that’s what we’ll contribute to the debate as South Africa prepares for Copenhagen.